	Application No.	Applicant(s)
Notice of Allowability	10/060,549	OETTINGER ET AL.
	Examiner	**Art Unit**	
	David S. Kim	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *17 July 2007*.

2. ☒ The allowed claim(s) is/are *21,23-31,35 and 36 (renumbered as claims 1-12)*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

  Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

     Authorization for this examiner's amendment was given in a telephone interview with Mr. William B. Kempler on Friday, 03 August 2007.

     The application has been amended as follows:

In the claims (additions are underlined portions, deletions are strikethrough portions)

     Claim 21. A method for providing a common coordinate basis between two optical wireless units wherein information is transmitted between the optical wireless units via light beams, the method comprising:

     at the first optical wireless unit:

         moving the light beam in a first prespecified pattern;

         receiving detector range data from the second optical wireless unit; and

         moving the light beam in a second prespecified pattern;

     at the second optical wireless unit:

         determining detector range;

         transmitting the detector range; determining reference positions;

         generating a table of detector readings; and

wherein the first prespecified pattern is a spiral pattern with a specified number of revolutions, first determining step comprising:

         calculating a signal strength metric for each revolution;

         maintaining a maximum signal strength;

         comparing the signal strength metric with a threshold;

         setting a radius of dynamic range <u>of a search pattern about remote detectors at the second optical wireless unit</u> if the signal strength metric is less than the threshold; and

transmitting the radius to the first optical wireless unit.

Claim 23. The method of claim 21, wherein the second optical wireless unit senses the light beam with its optical detectors a plurality of times per revolution of the light beam, the signal strength metric is expressed as:

$$signalStrength = \sum_{\substack{positional \\ data}} (NE^2 + SE^2 + SW^2 + \text{NW2)} \underline{NW^2)}$$

where: NE, SE, SW, and NW are data provided by the optical detectors and the summation is over all measured positional data points in a single revolution.

Claim 35 (replace previous versions of claim 35 with the following version). A method for providing a common coordinate basis between two optical wireless units wherein information is transmitted between the optical wireless units via light beams, the method comprising:

at the first optical wireless unit:

moving the light beam in a first prespecified pattern;

receiving detector range data from the second optical wireless unit; and

moving the light beam in a second prespecified pattern;

at the second optical wireless unit:

determining detector range;

transmitting the detector range;

determining reference positions;

generating a table of detector readings and,

wherein the method further comprises

selecting a position from the table based on an optical detector reading comprising

polling the optical detectors for an optical detector reading, wherein the optical

detector reading is determined from data provided by the plurality of

optical detectors and is expressed as:

$$remote_x = NE + SE - SW - NW$$
$$remote_y = NE - SE - SW + NW$$

where: $remote_x$ and $remote_y$ are the optical detector readings, and NE, SE, SW, and NW are data from the optical detectors;

generating a set of table indices; and

selecting a position using the set of table indices

wherein the set of table indices are generated from the optical detector

reading and is expressed as:

$$tentry_x = trunc(s_{xl} remote_x + remote_{x\,min})$$
$$tentry_y = trunc(s_{yl} remote_y + remote_{y\,min})$$

where: $s_{xl} = \dfrac{NumTableEntries}{remote_{x\,max} + remote_{x\,min}}$ $\quad s_{yl} = \dfrac{NumTableEntries}{remote_{y\,max} + remote_{y\,min}}$,

NumTableEntries is a number of entries in the table, $remote_{xmax}$, $remote_{xmin}$, $remote_{ymax}$, and $remote_{ymin}$ are maximum and minimum values along columns and rows of the table, and the trunc() operator truncates a numerical value to a specified number of decimal places; and

transmitting the position to the first optical wireless unit after generating the table.

Claim 36 (replace previous versions of claim 35 with the following version). The method of claim 35, wherein the position is stored in the table and is selected via the expressions:

$$x_{cmd} = (table_x(tentry_x + 1) - table_x(tentry_x)) *$$
$$(remote_x S_{xl} - tentry_x) + table_x(tentry_x)$$
$$y_{cmd} = (table_y(tentry_y + 1) - table_y(tentry_x)) *$$
$$(remote_y S_{yl} - tentry_y) + table_y(tentry_y)$$

where: $table_x()$ and $table_y()$ are functions returning x and y entries from the table.

In the specification (additions are underlined portions, deletions are strikethrough portions)

　　　On page 23, amend the following middle paragraph as follows:

　　　Finally, substituting equations (1) into equations (2), x_{cmd} and y_{cmd} can be expressed in terms of x_{sense} and y_{sense}. After some simplification, ~~x_{sense} and y_{sense}~~ $\underline{x_{cmd}\ and\ y_{cmd}}$ can be expressed as:

Conclusion

2.　　　Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

　　　If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

　　　Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER